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259. Aspects of clinical asthma

P2377

Omalizumab decreases IgE production in patients with severe allergic asthma
Marisa Huebner, Stephanie Korn, Matthias Jung, Roland Buhl. *Pulmonary Department, Mainz University Hospital, Mainz, Germany*

A pharmacokinetic-pharmacodynamic model predicts that omalizumab reduces production of IgE [1]. To test this hypothesis serum total-IgE concentrations were quantified in 64 patients with severe allergic asthma (mean±SEM, 46.2±13 yrs, 41 female, 81.6±15 kg, total IgE 397±189 IU/ml, FEV_1 2.1±0.1 L or 64.7±2.4% pred., eNO 51.2±7.4 ppb) treated with omalizumab (median 450 mg/month). Total serum IgE, asthma control (ACQ), lung function (FEV_1) and exhaled nitric oxide (eNO) were evaluated at baseline (w0, n=64), after 16 weeks (w16, n=64) and after 52 weeks (w52, n= 24) of treatment.
50 patients responded to omalizumab treatment. Overall (n=64), after 16 weeks ACQ (w0 3.2±0.16, w16 2.3±0.18; p<0.001), FEV_1 (w16 2.3±0.12; p=0.01) and eNO (w16 40.1±5.4; p=0,027) improved significantly. Total IgE increased by 536±141 IU/ml (w16 984±215 IU/ml, p<0,001). Changes in total-IgE did not differ between responders and non-responders. After 52 weeks total IgE was 643±197 IU/ml, a decrease by 99±53 IU/ml vs. week 16 IgE levels, whereas ACQ, FEV_1 and eNO remained stable. In this period total IgE serum concentrations decreased in 19 of 24 patients.
These results support the conclusion that long-term omalizumab treatment reduces IgE production. Further, total serum IgE should provide a means to monitor IgE production and guide individual treatment decisions.
1. Lowe PJ, Renard D. Omalizumab decreases IgE production in patients with allergic (IgE-mediated) asthma; PKPD analysis of a biomarker, total IgE. Br J Clin Pharmacol 2011; 72(2):306-320.

P2378

Impact of omalizumab treatment persistence on asthma control
Marie-Hélène Lafeuille[1], Jonathan Gravel[1], Jie Zhang[2], Boris Gorsh[2], Maria Figliomeni[2], Patrick Lefebvre[1]. *[1]Health Economics and Outcomes Research, Groupe d'analyse, Ltée, Montréal, QC, Canada; [2]US Health Economics & Outcomes Research (HE&OR), Novartis Pharmaceuticals Corporation, East Hanover, NJ, United States*

Omalizumab is indicated for moderate to severe allergic asthma patients with in-adequately controlled symptoms. The purpose of the current study was to evaluate the impact of omalizumab treatment persistence on asthma control.
Health insurance claims from the MarketScan database (2002Q1-2011Q2) were analyzed. Asthma patients with ≥12 months of continuous insurance coverage after the first omalizumab claim (index date) following 6 months of continuous omalizumab use were included. A 12-month landmark period following the index date was used to assess treatment persistence, defined as uninterrupted treatment without a gap of ≥28 days in omalizumab use. The impact of persistence with omalizumab treatment on asthma-related emergency-department (ED) visits and hospitalizations occurring between months 13 and 24 was evaluated. Multivariate time-varying Cox regressions were also conducted to assess the adjusted impact of treatment interruption (lack of persistence) on asthma control from month 1 to month 24.
In total, 3044 patients (mean age: 48.5; female: 62.4%) formed the study population. Persistence with omalizumab treatment at 12 months (39% of patients) was associated with a 51% reduction in the mean [SD] number of ED visits per patient (persistence vs. non-persistence: 0.064 [0.3] vs. 0.129 [0.5], P<.001) and a 28% reduction in hospitalizations (0.131 [0.4] vs 0.182 [0.6], respectively, P=0.034). Multivariate analyses corroborated these findings (HR [95% CI] for persistence vs. non-persistence: risk of ED visit: 0.63 [0.55-0.73], P<.001; risk of hospitalization: 0.69 [0.61-0.79], P<.001).
This analysis showed that omalizumab treatment persistence was associated with significant reductions in ED visits and hospitalizations.

P2379

Gender medicine and different prevalence in asthma by reports on anti-IgE (omalizumab) treatments
Vincenzo Patella[1], Carmine Oricchio[2], Giovanni Florio[1], Ada Giuliano[3]. *[1]Division of Clinical Immunology and Allergy, General Hospital, ASL Salerno, Agropoli, Salerno, Italy; [2]Division of Transfusion Medicine, General Hospital, ASL Salerno, Agropoli, Salerno, Italy; [3]Public Health Hygiene, ASL Salerno, Vallo della Lucania, Salerno, Italy*

Background: Generally, pathogenesis and prevalence of bronchial asthma indi-

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cates that age and sex are the major risk factors. Detailed physiological mechanisms of the changing sex ratio are not fully known. We investigated the influence of gender in anti-IgE treated asthmatics.

Methods: We pooled data from ten published studies from 1999 with more of our data of severe persistent asthmatics treated with omalizumab (anti-IgE) monoclonal antibody. Static analysis was used to find gender risk factors as the ratio of treatment effect (omalizumab: control) on standardized exacerbation rate per year.

Results: The studies included 3270 omalizumab treated patients, whose had severe persistent asthma according to Global Initiative for Asthma (GINA) classification. Analysis of two groups male vs female showed that the efficacy of omalizumab on asthma exacerbations was unaffected by patient age, gender, baseline serum IgE (split by median) or by 2- or 4-weekly dosing schedule, although a more large number of women were treated (1921/1349; 59% women vs 41% men; p< 0.001) and benefit in absolute terms appeared to be greatest in women patients which had a more severe asthma, defined by a lower value of percentage predicted forced expiratory volume in 1 s (FEV1) at baseline, this subgroup showed odds of being a responder (composite definition) 1.25 times higher (95% confidence interval, 1.18 to 3.01) than men.

Conclusions: These results suggest that in population of asthmatics treated with anti-IgE the number of women is shown higher than men, it confirms that asthma should be considered with different approach by the gender for being adequately controlled on current therapy.

P2380
Factors predicting airflow obstruction in severe asthmatics
Baoyi Zeng, Li Leng Tan, Su Ying Low, Thun How Ong, Keng Leong Tan, Mariko Koh. *Respiratory Critical Care Medicine, Singapore General Hospital, Singapore, Singapore*

Severe asthma was defined as "treatment-resistant severe asthma" and includes asthmatics on highest level of recommended treatment (high-dose Inhaled Corticosteroids (ICS) or high-dose ICS plus Long-Acting Beta- Agonist combination)[1]. Airway remodeling was defined as $FEV_1 \leq 60\%$. Factors predicting remodeling were studied which include demographic profile, duration of asthma, allergen sensitization, presence of bronchial hyper-responsiveness, asthma-related comorbidities and frequency of asthma exacerbations.

207 fulfilled severe asthma definition. Amongst these patients, 59 had airway remodeling. Airway remodeling was associated with increasing number of allergen sensitization (p=0.032). Amongst those with 5-8 allergen sensitization, 37.5% (n=12) had $FEV_1 \leq 60\%$. In comparison, 15.9% (n=7) had $FEV_1 \leq 60\%$ amongst those with 1-4 allergen sensitization. The presence of bronchial hyperresponsiveness on methacholine challenge test, significant bronchodilator response and smoking were also significantly associated with $FEV_1 \leq 60\%$ (p< 0.001, p<0.001, p=0.011 respectively). Frequency of asthma exacerbations (steroid burst, admissions and unscheduled emergency department visits), duration of asthma and presence of asthma related co-morbidities were not significantly associated.

We have found that patients with broader spectrum of allergen sensitization were more likely to have airway remodeling. Early detection of allergen sensitization may be important and aggressive treatment of allergies may be able to arrest or reverse the remodeling process. Our findings concur with previous reports of presence of bronchial hyperresponsiveness, bronchodilator response and smoking being risk factors for remodeling.

P2381
Severe asthma in old patients is characterized by signs of immunosuppression and by lymphocyte resistance to glucocorticoids
Alexander Pukhalsky[1], Galina Shmarina[1], Tamara Vylegzhanina[2], Tamara Chervinskaya[2], Olga Kozyreva[2], Vladimir Alioshkin[3]. *[1]Department of Cystic Fibrosis, Research Centre for Medical Genetics, Moscow, Russian Federation; [2]Department of Asthma, NRC Institute of Immunology, Moscow, Russian Federation; [3]Laboratory of Cytokines, G.N. Gabrichevsky Institute of Epidemiology and Microbiology, Moscow, Russian Federation*

The aim of this study was to investigate the adaptation system in asthmatic patients. Twenty one patients were enrolled into the study. In 15 patients the clinical course was evaluated as severe and 6 patients demonstrated the middle asthma (mean age, 60.3±2.5 and 30.8±3.0 years, respectively). Individual susceptibility of peripheral blood lymphocytes (PBL) to glucocorticoids (GCs) was evaluated by Δh value calculation: an integrative parameter, including the level of mitogen-induced lymphocyte proliferation and inhibition degree of the cell proliferation by dexamethasone. In healthy subjects the mean Δh level was −0.24±0.30 (negative

values of Δh correspond to high cell sensitivity to GCs). Results of the study are presented in the Table 1.

The results show that severe asthma is associated with low PBL sensitivity to GCs, HPA axis exhaustion (low ACTH level) and the signs of immunosuppression (high $TGF\beta1$ level and low PBL proliferative response).

P2382
Compliance and persistence among users of subcutaneous and sublingual allergen immunotherapy
Menno Kiel[1], Esther Röder[2], Wim Hop[3], Maiwenn Al[1], Roy Gerth van Wijk[2], Maureen Rutten-van Mölken[1]. *[1]Dept. of Health Economics, Institute for Medical Technology Assessment, Erasmus University, Rotterdam, Netherlands; [2]Section of Allergology, ErasmusMC-University Medical Centre, Rotterdam, Netherlands; [3]Department of Epidemiology & Biostatistics, ErasmusMC-University Medical Centre, Rotterdam, Netherlands*

Background: Subcutaneous(SCIT) and sublingual (SLIT) allergen immunotherapy is a safe and effective treatment of allergic rhinitis, but high levels of compliance and persistence are crucial to achieving the desired clinical effects. The objective was therefore to assess levels and predictors of compliance and persistence among grass & tree pollen, and house dust mite immunotherapy users in real-life, and estimate costs of premature discontinuation.

Methods: A retrospective analysis of a community-pharmacy database from The Netherlands containing data from 6486 patients starting immunotherapy for one or more of the allergens of interest between 1994 and 2009. 2796 patients received SCIT and 3690 received SLIT. Time-to-treatment discontinuation was analyzed and included Cox proportional Hazard models with time-dependent covariates, where appropriate.

Results: 82% per cent of users did not reach the minimally required duration of treatment of three years (SCIT: 77%, SLIT: 93%). Median durations for SCIT and SLIT users were 1.7 and 0.6 years, respectively. Of the persistent patients, 58 per cent were never late in picking up their medication from the pharmacy. Other independent predictors of premature discontinuation were prescriber, with general practitioner patients demonstrating longer persistence than those of allergologists and other medical specialists, multiple-allergen therapy, higher socioeconomic status, and younger age. Direct medication costs per nonpersistent patient were € 3,800.

Conclusion: Persistence is better in SCIT users than in SLIT users. Further studies are needed to determine whether persistence can be improved by administering the therapy close to the patient's home.

P2383
Changes in the prevalence of asthma, rhinitis and eczema in different age groups in Chinese schoolchildren
Ning Song, Mohammed Shamssain, Jin Zhang, Shuting Hao, Jitao Guan, Jianling Wu, Chunling Fu, Xixin Yan. *Respiratory Medicine, The Second Hospital of Hebei Medical University, Shijiazhuang, Hebei, China School of Health Sciences, University of Sunderland, United Kingdom Respiratory Medicine, The Second Hospital of Shijiazhuang, Shijiazhuang, Hebei, China*

Introduction: Little is known about the prevalence of allergic diseases in children of different ages. This study aimed to investigate the prevalence of allergic diseases in children over a wide age range in Chinese schoolchildren in Shijiazhuang city in Hebei Province in China.

In a cross-sectional study, we studied 10824 Chinese schoolchildren, aged 6-18 years, using ISAAC questionnaire. We classified children into three age groups; 6-8 years, 9-12 years, and 13-18 years. Asthma symptoms had significantly decreased with age from 6-8 year age group to 13-18 year age group (ever wheeze from 7.1% to 3.9%, P<0.001, current wheeze from 2.2% to 1.4%, cough from 11.6% to 10.6%, and ever asthma from 1.3% to 0.5%, P<0.001, respectively). Rhinitis symptoms had significantly increased with age from 6-8 year age group to 13-18 year age group (ever rhinitis from 11.2% to 16.4%, P<0.001, current rhinitis from 8.2% to 11.6%, rhinoconjunctivitis from 1.9% to 3.5%, P<0.05, and hay fever from 3.3% to 4.8%, P<0.05, respectively). Rash and eczema symptoms had significantly decreased with age from 6-8 year age group to 13-18 year age group (rash ever from 2.7% to 2.0%, current rash from 1.8% to 1.0%, P<0.001 and eczema from 15.4% to 7.2%, P<0.001, respectively). The study shows that symptoms of asthma and eczema had significantly decreased with age in these children while rhinitis symptoms had significantly increased indicating that rhinitis symptoms are major public health problem in Chinese children. The study will help to implement intervention strategies to control symptoms of rhinitis in this population.

P2384
Phenotypic predictors for hospital admission in adults with asthma: A case-controlled study
Josef Micallef, Eleanor Gerada, Richard Pullicino, Mariana Gauci, Steven Montefort. *Department of Respiratory Medicine, Mater Dei Hospital, Msida, Malta*

Background: RTIs are a known risk factor for admission with asthma exacerbation. Few studies give further insight to other possible risk factors.

Aim: To correlate asthma phenotypes with hospitalisation, in acute exacerbations of asthma.

Table 1

Parameter	Severe asthma	Middle asthma	P value
Length of disease (years)	19.6±3.6	12.4±3.3	0.17
FVC	89.3%	89.4%	0.6
FEV1	67.7%	71.8%	0.43
ACTH (pg/ml)	12.0±1.7	23.1±4.8	0.05
TGFβ1 (ng/ml)	17696±1026	12461±1810	0.024
Δh	2.03±0.18	1.0±0.17	<0.001
PBL proliferation (cpm*)	14542±2339	34567±7690	0.036

*Cpm, counts per minute.

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Methods: We included 100 asthmatics admitted with an acute exacerbation over 14 months; matched for age and sex with a 100 well-controlled asthmatics from asthma clinic. Information on sociodemographic variables, clinical and laboratory data was collected. Acute and convalescent (at 6 weeks) titres of serum immunoglobulin E (Se Ig E) and serum eosinophil count were taken. SPSS was used for statistical analysis.

Results: We detected a positive correlation between age of asthma onset and a history of atopy (p<0.0001) and a family history of atopy (p=0.023); but no correlation with Se IgE levels was found (p>0.05). There was no significant difference in the number of hospitalisations over the previous year between smokers and non-smokers (p=0.308). The difference between convalescent Se IgE levels in males (mean 324) and females (mean 159) was statistically significant (p=0.029). Acute Se Ig E levels and eosinophils were found to be positively correlated (p=0.027), however, no correlation was established between acute or convalescent Se IgE and duration of asthma, personal or family history of atopy (p>0.05). There is no significant difference between Se IgE levels in different BMI classes or in different age groups (p>0.05).

Conclusions: Asthma exacerbation is more likely in those who are atopic and have a longer duration of asthma. This was not evident for smoking asthmatics and BMI. Convalescent Ig E levels are higher in males post exacerbation.

P2385
Control of allergic rhinitis and asthma test, asthma control test and FeNO in asthma

Raquel Melo[1], Daniela Alves[2], Joao Cruz[2], Miguel Guimarães[1], Ricardo Lima[1]. [1]Pneumology, Centro Hospitalar Vila Nova Gaia/Espinho, EPE, Vila Nova de Gaia, Portugal; [2]Pneumology, Hospital de Braga, Braga, Portugal

Introduction: The assessment of asthma control is essential in the follow-up of this disease.

Objectives: Assessment of asthma and/or rhinitis control through the application of two questionnaires and the measurement of Fractional Nitric Oxide concentration in exhaled breath (FeNO).

Methods: Cross-sectional observational study of patients with asthma and/or rhinitis that, in a two months period, visited a respiratory function laboratory to perform lung functional tests with measurement of FeNO and to whom were applied 2 questionnaires: Control of Allergic Rhinitis and Asthma Test (CARAT) and Asthma Control Test (ACT).

Results: 109 patients, 65,7% women, mean age 32,6±17,9years. Of these, 63,3% had asthma and rhinitis, 24,8% had asthma and 11,9% had rhinitis. The mean FeNO was 36±28,4ppb (min/max= 4/115). 58,7% patients were atopic and a statistically significant association was established between atopy and FeNO (p<0.05). In patients with positive bronchodilatation test, FeNO values were higher (p<0.05).This study demonstrated a statistically significant correlation between the total CARAT (CARATt) and ACT test (r=0.7, p<0.05), as well as between asthma CARAT subscore (CARATa) and ACT test (r=0.8, p<0.05). It was demonstrated a statistically significant association between subjective control of the disease and CARATt, CARATa and ACT (p<0,05).

Conclusions: There was a statistically significant association between: atopy/positive bronchodilatation test and higher FeNO, and between CARATt/CARATa and ACT test scores. This study highlights the importance of using low cost and easily applicable questionnaires that are validated in the assessment of asthma control.

P2386
Pulmonary function test changes after cessation of inhaled corticosteroid therapy in asthma patients

Mitsuhide Ohmichi[1], Yukari Niinuma[1], Yuichi Yoshida[2]. [1]Respiratory Department, Ohmichi Clinic of Internal and Respiratory Disease, Sapporo, Hokkaido, Japan; [2]Cardiovascular Internal Medicine, Higashinaebo Hospital, Sapporo, Hokkaido, Japan

Background: Although guidelines recommend daily therapy for patients with mild persistent asthma, most patients use inhaled corticosteroid (ICS) intermittently or according to their symptom.

Aim: To clarify the findings of pulmonary function test after cessation of ICS in patients with mild persistent asthma and whether we can prospect which patients will be deteriorate in pulmonary functions after interruption of ICS.

Methods: A total of 193 patients with mild persistent asthma who stopped ICS and were able to re-evaluate the pulmonary function tests when they revisited our clinic, were recruited from 4644 asthma patients who visited our clinic from June 2001 to December 2011. We compared the findings of pulmonary functions between before and after cessation of ICS. We also compared the pulmonary functions on initial visit between the patients who were worsened and unchanged in FEV1 after stopping ICS.

Results: Seventy two patients (37.3%) were declined in 10% of FEV1 after cessation of ICS (group A), while 121 patients were unchanged (group B). The percent predicted FEV1 in group A before cessation of ICS were 100.8±12.6% and those of after were 84.7±13.3% (P<0.001). The percent predicted FEV1 in group B before cessation of ICS were 101.6±12.4% and those of after were 101.9±12.4% (N.S.). The percent predict FEV1 on initial visit were 91.2±13.1% in group A and 95.6±13.4% in group B (p<0.05).

Conclusion: It may be possible that patients with a FEV1 above 95% predicted normal on initial visit can be treated by as-needed ICS but the patients with lower percent predicted FEV1 on initial visit should be treated with daily ICS.

P2387
Association between paternal smoking and symptoms of asthma, rhinitis and eczema in Chinese schoolchildren

Ning Song, Mohammed Shamssain, Jin Zhang, Shuting Hao, Jitao Guan, Jianling Wu, Chunling Fu, Xixin Yan. Respiratory Medicine, The Second Hospital of Hebei Medical University, Shijiazhuang, Hebei, China School of Health Sciences, University of Sunderland, United Kingdom Respiratory Medicine, The Second Hospital of Shijiazhuang, Shijiazhuang, Hebei, China

Introduction: Parental passive smoking has been associated with adverse respiratory outcomes in children. Evidence remains inconclusive as to whether smoking is a risk factor for allergic disorders in children. The aim of the study was to evaluate the association between paternal smoking and symptoms of asthma and allergies in Chinese schoolchildren.

Body: We studied 10824 Chinese schoolchildren from Shijiazhuang city in Hebei province in China. We used an ISAAC questionnaire and we added questions related to parental smoking. The prevalence of paternal and maternal smoking in China is 56.52% and 1.34%, respectively. The prevalence rates of all symptoms of asthma, rhinitis and eczema were significantly higher in children exposed to paternal passive smoking compared with children not exposed to paternal smoking (wheeze ever 6.5% vs 4.6%, P<0.001; current wheeze 2.3% vs 1.5%; exercise-induced wheezing 3.9% vs 2.4%, P<0.001; cough 13.2% vs 8.7%, P<0.001; ever rhinitis 15.3% vs 11.6%, P<0.001; current rhinitis, 10.8% vs 8.1%; hay fever 4.7% vs 3.7%, P<0.05; ever chronic rash 2.9% vs 1.8%, P<0.01; current rash 1.8% vs 0.9%; and eczema 12.9% vs 9.7%, P<0.001, respectively). The study which is part of a major longitudinal study on Chinese children shows a strong association between parental smoking and symptoms of asthma, rhinitis and eczema and that Paternal passive smoking is an important risk for asthma and allergy in Chinese children.

P2388
Contribution of lung function tests in asthma screening: About a representative population

Ines Saada, Jouda Cherif, Sonia Toujani, Hafedh Zakhama, Yacine Ouahchi, Ben Salah Nozha, Bechir Louzir, Jalloul Daghfous, Nedia Mehiri, Majed Beji. Pulmonology, La Rabta Hospital, Tunis, Tunisia

Introduction: The major difficulty in epidemiological studies of asthma is due to the methods used to formulate the diagnosis. Studies conducted through questionnaires related frequencies often higher than those of objective tests including measurement of flow rates or airway hyperresponsiveness. we show through this study the contribution of spirometry in the diagnosis of asthma.

Methods: A cross-sectional survey, single pass, representative of the general population was carried out in the capital of Tunisia in subjects aged from 2 to 50 years. Informed consent was obtained. Prevalence was determinate through questionnaires, validated and used in international surveys, corresponding to the asthma screening and lung function tests. Spirometry was performed only in subjects reporting respiratory or atopy symptoms. Statistical analysis was performed using SPSS 18.0.

Results: The study included 4470 subjects. There was 40.2% male and 59.8% female. Current asthma prevalence was 6.8% in adults and 5.9% in children. Lung function tests were normal in 92% of cases (839 subjects). There was an airflow obstruction disorder in 11 individuals, 7 of which were reversible. Fifty subjects gain more than 12% in forced expiratory volume (FEV1). Of these, 20 did not report symptoms of asthma but had symptoms of atopy. We deduce that 19.6% of asthmatics had a reversibility and 6,8% were asymptomatics.

Conclusions: In the absence of gold standard, it is difficult to define asthma in epidemiological studies. If the measure of bronchial hyperresponsiveness has a specificity similar to questionnaires on asthma symptoms, it is also less sensitive.

P2389
Does allergens influence resistin levels in children with allergic rhinitis?

Maria Palma Carbone, Anna Maria Zicari, Bonci Enea, Francesca Occasi, Ilaria Ernesti, Giovanna De Castro, Paolo Del Greco, Marzia Duse. Pediatric, Sapienza University-Policlinico Umberto I, Rome, Italy

Background: Resistin, a serum protein produced by adipocytes and circulating macrophages, seems to be associated with inflammatory states. Many authors reported high levels of this serum adipokine in respiratory diseases such as allergic rhinitis(AR).

Aim: The purpose of this study was to confirm the relationship between resistin levels and atopy and to assess whether these levels were influenced by Skin Prick Test (SPT) patterns in children with nasal obstruction.

Methods: 35 children (15 males; mean age 9 yr) were selected for nasal obstruction: 12 monosensitized to house dust mites (HDM), 10 to grass pollens (GP) and 13 with negative SPT to airborne allergens.

A blood sampling to evaluate resistin serum values was performed in all subjects.

Results: Atopic patients showed significantly higher levels of serum resistin than non atopic children (4.6ng/ml vs 5.7ng/ml; p<0.05). Moreover resistin mean values

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were 5.5 ng/ml in children sensitized to HDM and 3.6 ng/ml in those sensitized to GP. This difference was statistically significant (0.001<p<0.01).

Conclusions: Our results confirm that serum resistin levels are associated with the allergic inflammatory process in children. Among patients with AR higher resistin serum levels also showed a stronger association with HDM monosensitization. Thus, resistin, as a proinflammatory protein, may be influenced also by the persistence of the allergic trigger and perennial allergens may increase its levels more than seasonal allergens.

P2390
Real life application of basophil activation test: A real challenge for diagnosis and treatment monitoring of atopy-related diseases?

Federica Garziano[1], Marialuisa Bocchino[1], Ediva Myriam Borriello[1], Anna Stanziola[1], Claudia La Rocca[2], Fortunata Carbone[2], Francesco Flavio[1], Alessandro Sanduzzi[1], Francesco Perna[1]. [1]Dipartimento di Medicina Clinica e Sperimentale, Università Federico II, Naples, Italy; [2]Istituto di Endocrinoliga e Oncologia Sperimentale, Centro Nazionale delle Ricerche, Naples, Italy

Skin prick test (SPT) is widely used for the diagnosis of Immunoglobulin-E (IgE)-mediated allergic diseases. Recently, a flow-cytometry based test assessing the degree of basophil de-granulation upon in vitro allergen challenge has been introduced into clinical practice. The basophil activation test (BAT) is a promising and safe tool as could obviate disadvantages of SPT also allowing testing of uncommon allergens not used in vivo. The objective of the present study was to compare BAT performance with SPT for different aeroallergens. We performed BAT and SPT in 34 adult subjects (14 males and 20 females; age range: 18-60 yrs) presenting with symptoms suggestive of rhinitis/bronchial asthma. Degranulated basophils were identified as $CD123^+HLA-DR^-CD63^+$ cells. At least 3 of 9 common aeroallergens were tested, including positive and negative controls, for a total of 146 determinations. We found that BAT results were significantly correlated with SPT (r=0.834, p<0.0001). Challenge with non conventional allergens allowed the identification by means of BAT of a case of bronchial asthma and atopic dermatitis who tested positive to Brachionus, Chlorella, and Nannochloropsis. Monitoring of atopic patients undergoing immunotherapy is actually in progress. As alternative to SPT, BAT in its present form is useful for distinguishing atopic from non-atopic patients. Further successful applications may include treatment monitoring and screening/diagnosis of type I hypersensitivity to uncommon allergens.

P2391
Monocyte inflammatory responsiveness and potential therapeutic target for pigeon fancier's hypersensitivity pneumonitis (HP)

Charles McSharry[1], M. Morrison[2], G. Short[2], K. Prentice[2], K. Ruddock[2], E. Rawlinson[2], Ruth Adamson[2], Kenneth Anderson[2]. [1]Immunology, Glasgow University, Glasgow, United Kingdom; [2]Respiratory Medicine and Pathology, University Hospital Crosshouse, Kilmarnock, United Kingdom

Objective: HP is an interstitial lung disease caused by an immune-hypersensitivity to inhaled antigens. Lung 'foamy' macrophages are characteristic of HP, and monocytes may already be primed towards this phenotype, therefore we studied the phenotype and function of blood monocytes in HP among pigeon fanciers.
Method: *Pigeon fanciers:* 22 with and 23 without HP symptoms. *Measures:* Spirometry, serum IgG to pigeon antigens, and cytokines (ELISA). Monocyte function assessed by *in vitro* cytokine response to relevant doses of LPS or antigen.
Results: LPS stimulation produced high (pg/ml, median [IQR]) IL-1b (976 [39, 140]), IL-6 (5161 [2000-20000]) and TNFa (521 [200, 1833]) compared with low concentrations in antigen cultures. LPS or antigen induced equal concentrations of IL-4, IL-8, IL-12 and CCL5. In contrast to LPS, antigen stimulated high concentrations (ng/ml) of CCL2 (12.5 [7.7, 16.3]) and IL-1RA (4.4 [1.3, 5.4]). The IL-1Ra concentration correlated with the serum IgG antibody titer (r=0.716, p<0.001) and with lung function (FEV1%predicted; r= -0.408, p=0.01). The *in vitro* production of most cytokines by either stimulus was dose-dependently inhibited by dexamethasone (10e-8 and 10e-6M) except for CCL3 and CCL4, and there was a trend for monocytes from subjects with HP to be less steroid responsive.
Conclusion: Development of HP was not limited by the potential of subjects' monocytes to produce pro-inflammatory cytokines. There appeared to be different LPS and antigen-driven cytokine endotypes. The relative steroid-insensitivity of some cytokines suggests that additional anti-inflammatory strategies might be useful in treating HP.

P2392
Long-term follow-up in Churg-Strauss syndrome following IFN-α-induced remission

Benjamin Seeliger, Martin Foerster, Anne Moeser, Janett Happe, Nils Kehler, Angelika Reißig, Brigitte Bartuschka, Claus Kroegel. Internal Medicine I, Pneumology & Allergology, University Clinics, Jena, Germany

Churg-Strauss syndrome (CSS) is a small vessel systemic vasculitis associated with asthma, eosinophilia, and involvement of other organs. Interferon (IFN) represents a immunomodulatory cytokine that induces remission in CSS. Herein, we evaluated the long-term effect of IFN-α-induced remission after discontinuation of IFN-α treatment.
We conducted a single-center, open-label pilot study using pegylated IFN-α (135

μg/week s.c.) for induction of remission in p-ANCA-negative CSS patients with predominant pulmonary involvement (defined as severe corticosteroid-dependent asthma, chronic rhinosinusitis, peripheral eosinophilia). Written informed consent was obtained from all individuals. A total of 8 patients were treated with IFN-α over more than 2 yrs leading to full remission without immunosuppressive therapy. In three patients (2 females, 1 male; ages 50, 51 and 60, respectively) treatment was discontinued due to side effects (neuropathia, autoimmune hepatitis, anaemia) after 3, 4, and 10 years. At this time-point, IFN-α treatment had induced full normalisation of initially elevated (38%, 25% 23%) eosinophil counts and reduction of total IgE serum-levels (797 to 55, 377 to 233; 1170 to 133 kU/L; min/max values) in all patients. Following discontinuation of IFN-α-treatment, side effects disappeared. In addition, IgE-levels and eosinophil counts did not change and patients remained in remission without immunosuppression during follow-up for up to 4 years.
Conclusions: Although reversible side effects occur, IFN-α is successful in inducing long-lasting remission even after discontinuation of therapy in patients with CSS.

P2393
Assessment of serum leptin level in the Egyptian asthmatic patients

Ramadan Bakr, Ashraf Dawood. Chest Diseases, Faculty of Medicine, Menoufiya University, Shebin Elkom, Menoufiya, Egypt Biochemistry, Faculty of Medicine, Menoufiya University, Shebin Elkom, Menoufiya, Egypt

Background: Asthma is a problem worldwide, with an estimated 300 million affected individuals. Obesity and asthma are both chronic conditions affecting millions worldwide.
Aim: To assess serum leptin levels in obese and non- obese patients with bronchial asthma.
Methods: This study was performed on 120 asthmatic patients, 60 patients (50%) were obese and 60 patients (50%) were non- obese according to BMI. According to the GINA guidelines, they were classified into; mild, moderate, severe and very severe asthma. Serum leptin level measurement for all patients was done after 8 hours fasting, by ELISA technique.
Results: Serum leptin level showed a significant increase in serum of obese asthmatics (23.2±3.8) than non- obese asthmatics (7.9±3.1). There was a highly significant increase in serum leptin level in obese asthmatic females than in non-obese asthmatic females with the same degree of asthma (p <0.001), and in obese asthmatic males than in non-obese asthmatic males with the same degree of asthma (p <0.001). Also, there was a highly significant increase in serum leptin level in obese asthmatic females than obese asthmatic males with the same degree of asthma (p <0.001) and in non-obese asthmatic females than non-obese asthmatic males with the same degree of asthma (p <0.001). The results of this study showed a significant positive correlation between serum leptin level and grades of asthma as well as a significant negative correlation between serum leptin level and FEV1, FVC and FEV1/FVC (p <0.001).
Conclusions: The high serum leptin level in asthmatic patients is related to, and affected by; the high BMI, female gender and degree of asthma severity.

P2394
Estimation of efficacy and safety of vaccination against pneumococcus in children with various deviations in a state of health

Tatyana Grechukha, Anna Gayvoronskaya, Marina Galytskaya. The Department of Vaccine and Prevention, Scientific Centre of Children's Health, Moscow, Russian Federation The Department of Vaccine and Prevention, Scientific Centre of Children's Health, Moscow, Russian Federation The Department of Vaccine and Prevention, Scientific Centre of Children's Health, Moscow, Russian Federation

Actuality: The pneumococcal infection proceeds hard in children with chronic diseases, particularly in children with kidney diseases. The most effective way of prevention is vaccination.
The purpose: to estimate efficacy and safety of vaccines Prevenar and Pneumo23 in children with chronic diseases.
Materials and methods: During the period of 2009-2011 494 children were vaccinated: 230 healthy children, and 264 children with different pathologies (117 children with kidney diseases, especially with nephrotic syndrome).Two types of vaccines were used: Prevenar and Pneumo23. We analyzed the shipping of vaccination, absence of relapses of disease after immunization within a year, the decrease of acute respiratory infections within a year after vaccination.
Results: There was no statistically significant difference on frequency and expressiveness of the general and local postvaccinating reactions between group of almost healthy and group of children with various deviations in a state of health(p>0,05). The general and local reactions to vaccination were seldom observed, and the expressed reactions have been noted only at 7 (4%) children, immunized by vaccine Prevenar and at 6 (4,5%) children, immunized by vaccine Pneumo23. The results showed the absence of relapses of the basic disease (nephrotic syndrome) after immunization, the decrease of acute respiratory infections in ill children during the year.
The conclusion: Vaccination against pneumococcal infection is effective and safe concerning the decrease of acute respiratory infections, relapses of the basic disease as for children with deviations in a state of health, and for children with kidney diseases.

MONDAY, SEPTEMBER 3RD 2012

P2395

Epidemiological study of bronchial asthma among preparatory school pupils in Assiut district

Alameldin Abdallah, Khalid Sanusy, Wafaa Shaaban, Dalia Mahran, Aliae Hussin. *Pediatrics, Faculty of Medicine, Assiut, Egypt Pediatrics, Faculty of Medicine, Assiut, Egypt Community Medicine, Faculty of Medicine, Assiut, Egypt Community Medicine, Faculty of Medicine, Assiut, Egypt Chest Diseases, Faculty of Medicine, Assiut, Egypt*

Background: The prevalence of asthma and allergies is increasing in both western and developing countries. Few studies evaluated asthma prevalence in Egypt.
Aims: Determination of the prevalence and risk factors of asthma among preparatory school children in Assiut district, in upper Egypt.
Subjects and methods: A cross sectional study was conducted among preparatory school students in Assiut city and two rural areas in Assiut governorate in upper Egypt. Twelve schools were selected randomly from different regions in Assiut city and two rurals areas. The total coverage of the students included was 1048 (482 boys and 566 girls).
Data were collected by self administered questionnaire (in Arabic Language) which was fulfilled by the participants.
Results: Of the 1048 positively responding subjects, 65 fitted the diagnosis of asthma with over all prevalence of 6.2%. No significant difference was found between urban and rural areas (P: 0.075).
A positive family history of allergy and the presence of other allergic disease were significantly associated risk factors for asthma.
Exposure to dust, cigarette smoke, playing and physical activity, and common cold attacks were the most common triggering factors for asthma exacerbations followed by other factors such as special foods or drinks.
Conclusion: Bronchial asthma is a significant health problem among children and adolescents in Assiut governorate and needs special care services. Wider scale multi-center studies in upper Egypt and other localities of Egypt are needed to outline the profile of bronchial asthma among children and adolescents in the whole country.

P2396

The in vitro effect of vitamin D on peripheral blood mononuclear cell cytokine expression in COPD

Niall Stewart, Richard Wood-Baker. *Centre for Clinical Research Excellence (Respiratory), University of Tasmania, Hobart, TAS, Australia*

Background: Vitamin D is recognised as a powerful modulator of immune responses. It promotes T helper 2 (Th2) immunity and the anti-inflammatory cytokine Interleukin-10 (IL-10). However, little is known about the effects of vitamin D on the immune response in COPD, a Th1 mediated disease.
Aims and objectives: We hypothesised that in COPD vitamin D would push a Th2 response, with increased levels of the Th2 cytokine Interleukin-4 (IL-4) and the suppressive cytokine IL-10. Such a shift could be beneficial in COPD.
Methods: We recruited 10 COPD subjects from whom we isolated peripheral blood mononuclear cells (PBMC) and measured serum 25(OH)D. PBMC were stimulated with antibodies to the T cell receptor either with or without added vitamin D.
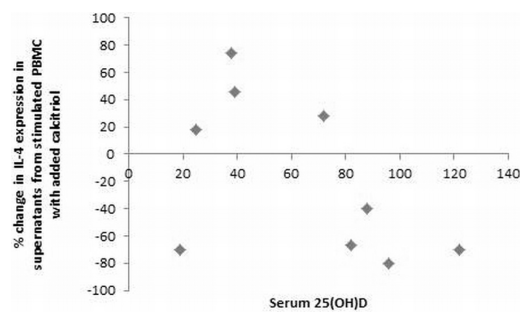

Figure 1. IL-4 biphasic response of PBMC from COPD subjects to vitamin D supplementation *in vitro*.
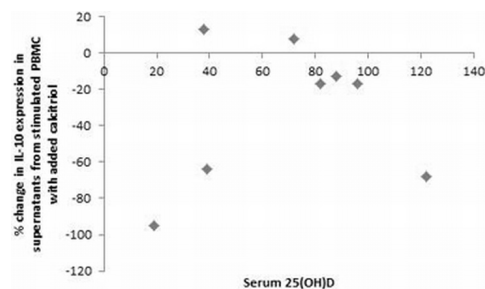

Figure 2. IL-10 biphasic response of PBMC from COPD subjects to vitamin D supplementation *in vitro*.

Results: For both IL-4 and IL-10, we observed a biphasic effect of vitamin D supplementation. For those with low (<30nmol/L) and high (>80nmol/L) serum 25(OH)D, added vitamin D suppressed IL-4 and IL-10 (Figure 1,2). Between these two levels, vitamin D increased expression.
Conclusions: Serum 25(OH)D levels may be an important determinant of the usefulness of vitamin D in beneficially modifying the immune response in COPD.

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